

CHARACTERIZATION OF MEDICATION USE AMONG ELDERLY PEOPLE ATTENDED AT A FAMILY HEALTH CARE SERVICE

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ABSTRACT: The objective was to characterize medication use among elderly people attended at a Family Health Care Service. A cross-sectional and descriptive study was undertaken, involving 134 elderly, between August and November 2014, at a Primary Health Care Service in the city of Tejuçuoca-Ceará. Interviews were held with the elderly, containing information about the sociodemographic characteristics, the self-referred non-transmissible chronic conditions and medication use. The data were analyzed descriptively using EpiInfo versão 7. and R v2. 10.0. In the study population, multiple drug therapy prevailed (82.1%). The most referred chronic conditions were arterial hypertension (59.1%) and diabetes mellitus (25.2%). In conclusion, knowing the drug administration practices and their characteristics in the elderly is essential for the health professionals to advise this population on the correct use of the drugs.

DESCRIPTORS: Polypharmacy; Aged; Primary health care.

CARACTERIZAÇÃO DO USO DE MEDICAMENTOS ENTRE IDOSOS ATENDIDOS EM UMA UNIDADE BÁSICA DE SAÚDE DA FAMÍLIA

RESUMO: Objetivou-se caracterizar o uso de medicamentos entre idosos atendidos em uma Unidade Básica de Saúde da Família. Trata-se de um estudo transversal, descritivo realizado com 134 idosos, entre os meses de agosto e novembro de 2014, em uma Unidade Básica de Saúde do município de Tejuçuoca-Ceará. Foram realizadas entrevistas com os idosos, contendo informações sobre as características sociodemográficas, as condições crônicas não transmissíveis autorreferidas e o uso de medicamentos. Os dados foram analisados descritivamente com o auxílio dos softwares EpiInfo versão 7. e R v2. 10.0. Na população em estudo, verificou-se a prevalência de polifarmacoterapia (82,1%). As doenças crônicas mais referidas foram hipertensão arterial (59,1%) e diabetes mellitus (25,2%). Conclui-se que conhecer as práticas de administração dos fármacos e suas características nos idosos é essencial para os profissionais de saúde orientarem essa população quanto ao uso correto dos medicamentos.

DESCRIPTORIOS: Polimedicação; Idosos; Atenção básica.

CARACTERIZACIÓN DEL USO DE MEDICAMENTOS ENTRE ANCIANOS ATENDIDOS EN UNA UNIDAD BÁSICA DE SALUD DE LA FAMILIA

RESUMEN: La finalidad fue caracterizar el uso de medicamentos entre ancianos atendidos en una Unidad Básica de Salud de la Familia. Se trata de un estudio trasversal, descriptivo con 134 ancianos entre agosto y noviembre del 2014, en una Unidad Básica de Salud del municipio de Tejuçuoca-Ceará. Los ancianos fueron entrevistados, con informaciones sobre las características sociodemográficas, las condiciones crónicas no trasmisibles autoreferidas y el uso de medicamentos. Los datos fueron analizados descriptivamente con los programas EpiInfo versión 7. y R v2. 10.0. En la población estudiada, se verificó la prevalencia de polifarmacoterapia (82,1%). Las enfermedades crónicas más referidas fueron hipertensión arterial (59,1%) y diabetes mellitus (25,2%). Se concluye que conocer las prácticas de administración de los fármacos y sus características en los ancianos es esencial para que los profesionales de salud orienten esa población respecto al uso correcto de los medicamentos.

DESCRIPTORIOS: Polifarmacia; Ancianos; Atención primaria de salud.

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● INTRODUCTION

In recent years, a considerable increase in the life expectancy has been observed and, consequently, in the elderly population. According to figures disseminated by the Brazilian Institute of Geography and Statistics (IBGE), in 2012, the life expectancy at birth was 74.6 years, against 68.6 years in 2000 and 66 years in 1991⁽¹⁾. The accelerated growth rhythm of the elderly population is observed globally, including in Brazil and in other Latin American countries⁽²⁾.

Projections from the World Bank⁽¹⁾ indicate that the Brazilian elderly population will increase from 11% of the economically active population in 2005 to 49% in 2050, while the school-age population will drop from 50% to 29% in the same period. In that sense, the speed of population aging in Brazil will be significantly higher than what happened in more developed societies in the past century^(3,4).

In Brazil, the change in the population profile results from the considerable increase in the Brazilian life expectancy which, associated with the drop in the birth rate, expands the relative proportion of elderly people in the population⁽⁴⁾. The population ageing entails implications for the health services in terms of capacity to respond to the demand and costing⁽⁵⁾.

The greater contact with chronic health conditions turns elderly people into great consumers of health services and medicines⁽⁵⁾. This is the most medicalized age group with the highest prevalence rates and incidence levels of comorbidities⁽⁶⁾.

The therapeutic benefits of correct medication use are undeniable, but their high consumption among elderly people can cause health risks⁽⁶⁾. On average, the elderly take two to five medicines per day and are particularly more sensitive to the adverse effects, medication interactions and toxicity⁽⁶⁾. In addition, in this age group, inappropriate dose prescriptions and indications are common, as well as redundancies and medication use without therapeutic value⁽⁷⁾.

The adverse consequences of multiple drug therapy and favor unwanted synergisms and antagonisms, non-compliance with the prescriptions of clinically essential products and excessive spending on superfluous drugs⁽⁸⁾. The incidence of adverse interactions among administered drugs is proportional to the number of drugs used simultaneously, to the extent that the frequency of significant medication interactions changes from 3% in patients taking up to six drugs to 20% when ten different medicines are taken⁽⁹⁾.

Self-medication, abuse, erroneous use and an indiscriminate number of prescriptions happen around the globe. As no drug is totally harmless, the incidence of adverse reactions tends to increase day by day, leading to medication problems and causing a large number of hospitalizations⁽¹⁰⁾.

The complexity of medication schemes, in combination with the lack of understanding, forgetting, reduced visual acuity and manual dexterity in the elderly contribute to a large number of medication administration errors. In addition, in the Brazilian reality, there is a high illiteracy rate, which can compromise the understanding and influence the incorrect drug use⁽¹¹⁾.

Considering the relevance of correct medication use in the elderly population, this study is justified by the understanding of this problem to support health professionals' actions, especially nurses', with a view to the quality of life and well being of this population.

Thus, the objective is to characterize medication use among elderly people attended at a Family Health Care service (UBSF).

● METHOD

A cross-sectional and descriptive study was undertaken among elderly people attended at an UBSF in the city of Tejuçuoca-CE.

Place of study, population and sample

The city of Tejuçuoca belongs to the microregion Médio Curu, in the State of Ceará, with an area of 750.60 km² and a population of 16,836 inhabitants in 2010⁽¹²⁾. The city's Primary Health Care service consists of 08 UBSF, distributed across 01 health district, across data from the Municipal Health Department.

In this study, elderly people around 60 years of age were included, without cognitive deficit and who were registered at an UBSF in the city of Tejuçuoca-CE. In the choice of the UBSF, the fact was considered that it was located in the central part of the city and received a great demand from elderly people.

To obtain the sample, the total number of families enrolled at this UBSF was verified, totaling 681 families. In the envelopes, the existence of relatives was observed and, in the patient histories, it was verified whether the family composition referred to an elderly member (n = 276). Next, through random drawing (60% of the histories of elderly people), 165 elderly were selected. Home visits were adopted as the research strategy.

To screen for elderly with a cognitive deficit, the Mini-Mental State Examination-MMSE was used. The MMSE consists of 30 categorical questions, scored as follows: 30 to 26 points (preserved cognitive functions); 26 to 24 points (alteration without suggesting a deficit) and 23 points or less (suggesting cognitive deficit)⁽¹³⁾. Among the elderly, 18 were excluded from the study because of a cognitive deficit and 13 refused to participate in the study, resulting in a total number of 134 elderly who were investigated in this study. The scheme adopted to obtain the study sample is displayed in Figure 1.

Procedures for information collection and data analysis

To collect the data, interviews were held with the elderly, containing information on the sociodemographic characteristics, the medication use and the existence of (self-referred) non-transmissible chronic conditions. These data were collected between August and November 2014.

To identify the drugs, the medicines the elderly was taking on the day of the interview were considered, including prescribed and non-prescribed drugs. Therefore, the elderly was asked to show the drugs taken and/or the medical prescription to the researcher. The drugs were classified according to the Anatomical Therapeutic Chemical Code (ATC) adopted by WHO⁽¹⁴⁾, correlating drug classes and drugs.

The collected data were included in an electronic database through double entry and later confronted to correct errors and inconsistencies. Next, descriptive analysis was undertaken using EpiInfo version 7. and R v2. 10.0.

From the regulatory viewpoint, the study complies with National Health Council Resolution 466 from 2012⁽¹⁵⁾. Approval for the project was obtained from the Ethics Committee at Universidade Federal

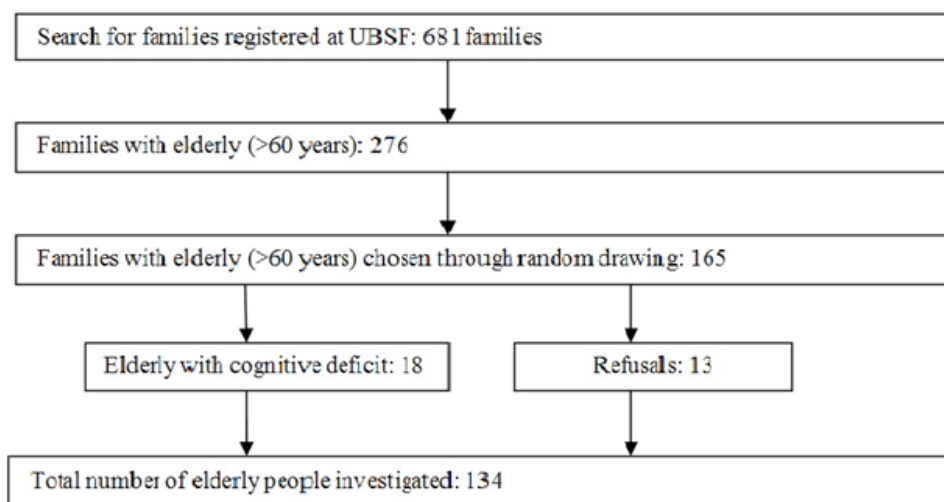


Figure 1 – Sampling steps for the study “Use of medicines among elderly attended at a Family Health Care Service”. Tejuçuoca, Ceará, Brazil, 2014

do Ceará (UFC) under Opinion 660.902. The relevance and objectives of the research were properly explained to the research participants, after which the Informed Consent Form was signed, a necessary condition to participate in the study.

● RESULTS

Concerning the sociodemographic characteristics of the 134 interviewed elderly, it was verified that 64.2% were female, the majority was between 70 and 80 years old (35.1%) and between 65 and 70 years (32.8%), 53% had not finished primary education, 61.9% were married/fixed partner, 31.3% lived alone and 68.6% gained only one minimum wage as a family income (Table 1).

Of all elderly who took medicines (n=121), 52.9% reported getting their drugs from public pharmacies, and 36.4% affirmed that they both purchase and buy their medicines from public pharmacies. As regards forgetting to take their daily drugs, most elderly reported not forgetting (66.1%), followed by 31.4% who said they forget sometimes, and 2.5% who always forget. Most of the elderly also informed that they received orientations on medication use (85.1%), that they know the indications (90.9%) and the adverse effects of the medication (66.1%) (Table 2).

Table 1 – Sociodemographic characteristics of investigated elderly. Tejuçuoca, CE, Brasil, 2014

Variables	n	%
Sex		
Female	86	64.2
Male	48	35.8
Age (years)		
60 to 65	31	23.1
65 to 70	44	32.8
70 to 80	47	35.1
> 80	12	9
Education		
None	49	36.6
Unfinished Primary Education	71	53
Finished Primary Education	8	6
Finished Secondary Education	6	4.4
Marital status		
Married/fixed partner	83	61.9
Single	15	11.2
Widowed	36	26.9
Whom you live with		
Alone	42	31.3
Only with partner	17	12.7
Only with children	23	17.2
Partner/children/grandchildren	37	27.6
Friends/relatives	6	4.5
Other	9	6.7
Family income*		
1 minimum wage	92	68.6
> 1 minimum wage	42	31.4

*Minimum wage at the time of study: R\$ 722.00.

Table 2 – Distribution of elderly using drugs (n=121) according to medication treatment compliance data. Tejuçuoca, CE, Brazil, 2014

Variables	n	%
How you take the medicine		
Alone	99	81.8
Supervised	15	12.4
Medicated by another person	7	5.8
Where you get the medicine		
Purchase	13	10.7
Public Pharmacy	64	52.9
Both	44	36.4
Complaints/difficulties related to medicine use		
Yes	13	10.7
No	108	89.3
Forget to take medicines		
No	80	66.1
Sometimes	38	31.4
Rarely	0	0
Always	3	2.5
Receive orientation to use medicines		
Yes	103	85.1
No	18	14.9
Knowledge about medicine indications		
Yes	110	90.9
No	11	9.1
Knowledge about adverse effects		
Yes	80	66.1
No	41	33.9

As regards the number of different drug types the elderly used, it was observed that the majority used two to five types of drugs, totaling 70.8% of the interviewees, while 11.3% used six to nine types of drugs. Only 9.7% of the elderly affirmed that they did not take any type of drugs and 8.2% used only one type (Table 3).

Among the drugs the elderly use, hydrochlorothiazide, captopril and acetylsalicylic acid (ASA) were the most frequent drugs, corresponding to 17.7%, 11% and 11% of all drugs the elderly use, respectively (Table 4).

Among the (self-referred) chronic non-transmissible diseases, arterial hypertension and diabetes mellitus were the most frequent, corresponding to 59.1% and 25.2% of all diseases the elderly referred, respectively (Table 5).

Table 3 – Distribution of the elderly investigated according to the number of drugs used. Tejuçuoca, CE, Brazil, 2014

Number of drugs used	n	%
None	13	9.7
1	11	8.2
2	32	23.8
3	21	15.7
4	27	20.1
5	15	11.2
6	5	3.8
7	5	3.8
8	2	1.5
9	3	2.2
Total	134	100

● DISCUSSION

The sociodemographic data found in this study support another research⁽⁶⁾ developed in Quixadá-CE, in which the interviewed elderly were: female (64.3%), between 60 and 69 years of age (41%), unfinished primary education (54.4%), married (56%), family income up to one minimum wage (66.1%) and living with up to three people (63.5%); only the latter information diverged, as elderly living alone were predominant in the study in Tejuçuoca-CE.

The fact that the interviewed elderly population was female reflected the general condition of the elderly population in Brazil, with a greater proportion of elderly people. Among the hypotheses explaining this difference, the hypothesis is highlighted that there are high early mortality rates among men related to violence, traffic accidents, chronic illnesses and work-related diseases⁽¹⁶⁾. In addition, it may be related to the fact that women attend health services more frequently⁽¹⁷⁾.

When analyzing education, it was verified that most elderly were illiterate or had not finished primary education, which may reflect the difficulties to get access to schools when these elderly were born in an environment in which formal education was devalued and socioeconomic conditions were precarious⁽¹⁸⁾.

Education and income strongly influence the population's health situation. The elderly with a higher education level and better income are more independent for self-care, including correct use of medication, transportation and communication media, while elderly with lower purchasing and intellectual power are more susceptible to diseases and, consequently, need more health care⁽¹⁹⁾.

In a study developed in Campinas-SP⁽¹⁹⁾, a strong association between non-adherence to treatment and the family arrangement "lives alone" was observed. The family or caregiver's participation is important for the elderly people's treatment compliance since, as age advances, they tend to become more dependent due to the cognitive and physiological deficits characteristic of this phase of life⁽¹⁹⁾.

According to a study undertaken in São Paulo-SP⁽¹¹⁾ in 2008, despite being an important component of the National Medication Policy, the use of generic drugs remains far from a reality among the elderly interviewed in that research, as more than half of the drugs used among the 301 elderly who participated in the study were purchased under their brand name. In addition, 49.2% of the drugs did not figure on the list of medicines selected by the Municipal Health Department⁽¹¹⁾. These data diverge from the study findings, in which most elderly get drugs from the public pharmacy. Nevertheless, besides the medicines obtained through that route, many elderly need to complement their medication therapy by buying medicines.

Table 4 – Classes and subgroups of medicines* used by the investigated elderly. Tejuçuoca, CE, Brazil, 2014

Variables	n	%
Drugs that affect the cardiovascular system		
Hypotensors		
ECA inhibitor		
Captopril	47	11
Enalapril	8	1.9
Calcium channel blocker		
Nifedipine	1	0.2
Amlodipine	10	2.3
Cardioselective blocker		
Beta1 / Atenolol	6	1.4
Beta blocker		
Propranolol	14	3.3
Carvedilol	2	0.5
Angiotensin II receptor antagonist		
(ARA 2) / Losartan	41	9.5
Drugs affecting the kidneys		
Aldosterone antagonist / Spironolacton		
	2	0.5
Diuretic		
Furosemide	4	0.9
Hidrochlorothiazide	76	17.7
Drugs used in homeostasis and thrombosis		
Antiplatelet agents / ASA	47	11
Drugs affecting the pancreas and endocrine system		
Exogenous Insulin/Insulin		
	6	1.4
Receptor of sulfonylurea (subunit of ATP-dependent potassium channels) / Glibenclamide		
	19	4.4
Biguanide/ Metformin		
	32	7.5
Drugs affecting the gastrointestinal system		
Gastric pump inhibitor / Omeprazole		
	16	3.7
Gastric pump hypolipemiant – HMG-CoA-reductase inhibitor/ Simvastatine		
	41	9.5
Drugs affecting the central nervous system		
Benzodiazepines		
Diazepam		
	3	0.7
Alprazolam		
	3	0.7
Tricyclic antidepressants / Amitriptyline		
	3	0.7
Drugs acting in the bones /Calcium carbonate		
	12	2.8
Non hormonal anti-inflammatory agent		
Ibuprofen		
	4	0.9
Others		
	32	7.5

*According to Anatomical Therapeutic Chemical Code (ATC)⁽¹³⁾.

Table 5 – Distribution of medical diagnoses referred by the investigated elderly. Tejuçuoca, CE, Brazil, 2014

Referred diagnoses	n	%
Arterial hypertension	94	59.1
Diabetes mellitus	40	25.2
Hypercholesterolemia	9	5.7
Does not know	7	4.4
Arthritis	4	2.5
Osteoporosis	3	1.9
Insomnia	1	0.6
Hyperthyroidism	1	0.6
Total	159	100

In a study undertaken in the state of Rio de Janeiro-RJ⁽²⁰⁾, among the 20 elderly investigated, 12 affirmed that they experience some difficulty, mainly in financial terms, to get the medicines. Therefore, they use the public pharmacy, which often follows bureaucratic procedures that hamper the elderly's access to the health service and make it impossible to receive the drugs⁽²⁰⁾.

Most of the interviewed elderly affirmed that they do not forget to take the daily medicines and that they received orientations among the indications and adverse effects of the drugs they take. These figures can reflect good health care by the team, providing problem-solving clarifications about the medication treatment of each person. In that sense, the family health professionals' role is evidenced, especially the nurses', who are responsible for understanding the nature of the diseases and the associated risk factors with a view to planning a strict control and monitoring scheme for these clients⁽¹⁸⁾. Developing health promotion and education activities is fundamental to prevent health problems and possible sequelae, which can provoke functional disabilities⁽¹⁸⁾.

Treatment compliance includes therapeutic and educative factors related to the users, involving aspects linked to the acknowledgement and acceptance of their health conditions and the active adaptation to these conditions, heeding the attitudes to promote quality of life and the development of awareness for self-care. These factors are also associated with the professionals and should involve person-centered health actions, which combine orientation, information, adaptations of the therapeutic schemes to the patient's lifestyle, clarification, social and emotional support, and not exclusively the procedures⁽²¹⁾.

The results found with regard to the number of different types of drugs the elderly used confirm multiple drug therapy in the research population. The mean number of drugs used per elderly ranges between two and five⁽²²⁾. Multiple drug use can entail risks for the elderly's health, in view of the possibility of health problems. Besides difficulties to manage their medicines, using countless drugs is a risk factor for the elderly, which can lead to hospitalization⁽²³⁾.

Although beneficial in many situations, medication use deserves some special care. The drugs used for cardiovascular problems were the most prevalent, especially hypotensors such as the angiotensin conversion enzyme (ACE) inhibitor and the calcium channel blocker. These drugs are considered responsible for the highest frequencies of interactions and, consequently, for possible adverse drug reactions⁽¹¹⁾.

Thiazides are the preferred drugs for elderly, except when a preferred drug is indicated. Even at low doses, thiazides preserve their anti-hypertensive efficacy, with a low risk of side effects (such as hypopotassemia, hypomagnesemia and hyperuricemia), with a low cost and proven cardiovascular benefits. Their use is safe and effective in diabetic patients and cases of isolated systolic hypertension⁽²⁴⁾. Hydrochlorothiazide, an example of a thiazide diuretic, was mentioned in this study, being indicated to treat arterial hypertension. This fact translates its correct use because of its safe effect⁽²⁴⁾.

These study results converge with a study involving 432 elderly over 60 years of age, in Recife-PE, in which, among the most used drugs, Hydrochlorothiazide 25 mg, Captopril 25 mg and acetylsalicylic acid (ASA) 100 mg stood out as the drugs the interviewees used most⁽²⁵⁾.

In a study developed in São Paulo-SP⁽²⁰⁾, a higher prevalence of ASA use was evidenced, representing 7.97% of all drugs, atenolol/metoprolol 4.39%, captopril/enalapril 4,71%, hydrochlorothiazide 3.1% and simvastatine 5.36%⁽¹⁹⁾. These cardiovascular drugs have been widely prescribed due to the fact that the cardiovascular diseases figure among the main causes of morbidity and mortality among elderly people⁽²⁶⁾.

Concerning the elderly's (self-referred) chronic illnesses, the predominance of arterial hypertension and diabetes mellitus was observed. In Brazilian elderly, arterial hypertension corresponds to 55% of all elderly aged 75 years or older⁽²⁷⁾, turning into a determinant factor in this population's morbidity and mortality, thus demanding the correct identification of the problem and appropriate therapeutic approach⁽²⁸⁾. Type 2 diabetes mellitus figures among the chronic illnesses that represent a severe public health problem due to its high prevalence around the world and higher prevalence among the elderly, due to the morbidity and due to being one of the main cardiovascular and cerebrovascular risk factors⁽²⁹⁾.

The growth of the elderly population in Brazil entails increasingly large challenges for the services and health professionals as, with age, chronic conditions emerge, including arterial hypertension, diabetes, making them depend on prolonged and continuous medication treatment⁽³⁰⁾.

In this sense, the chronic illnesses represent an important health problem, as they have contributed to higher morbidity and mortality rates, influencing the quality of life and limiting the autonomy of the long-living population, and also entailing financial impacts for society⁽³¹⁾.

● CONCLUSIONS

It was observed that the elderly in general use two to five different drugs, confirmed the multiple drug therapy, had a low education level, lived alone and gained a family income of one minimum wage, factors that make appropriate treatment compliance more difficult.

Nevertheless, most elderly affirmed that they do not forget the medication administration and have no complaints or difficulties. They affirmed that they received treatment orientations and understand the indications and adverse reactions of the drugs.

Among the research limitations, the research design can be appointed, as cross-sectional studies make it impossible to establish causal relations among the study variables. The same is true for the use of information on medication use and the presence of self-referred chronic diseases. Therefore, further research is suggested, with other designs and more forms to prove the referred information.

In addition, this study is intended to reveal the educational importance of health professionals, particularly nurses, regarding medication administration for elderly patients, thus permitting discussions on strategies regarding these aspects to reduce problems deriving from multiple drug therapy.

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